



Indicator-based multi-objective local search

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Résumé en anglais

This paper presents a simple and generic indicator-based multi-objective local search. This algorithm is a direct extension of the IBEA algorithm, an indicator- based evolutionary algorithm proposed in 2004 by Zitzler and Kuenzli, where the optimization goal is defined in terms of a binary indicator defining the selection operator. The methodology proposed in this paper has been defined in order to be easily adaptable and to be as parameter-independent as possible. We carry out a range of experiments on different binary indicators: Those used in IBEA experiments, and also the indicators derived from classical Pareto ranking methods taken from well-known multi-objective evolutionary algorithms of the literature. Experiments show that the best results are obtained using selection indicators which are not only based on Pareto dominance relation. Moreover, the generic local search algorithm presented in this paper and the proposed indicators obtain promising results which lead to a number of future research directions.

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